

Fig 1A

(PRIOR ART)  
8 POINTS DFT OBTAINED BY COMBINING TWO FOUR POINTS DFT

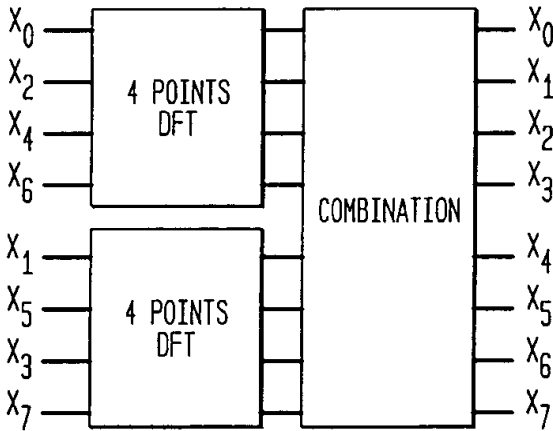


Fig 1B

(PRIOR ART)  
8 POINTS DFT OBTAINED BY COMBINING FOUR TWO POINTS DFT

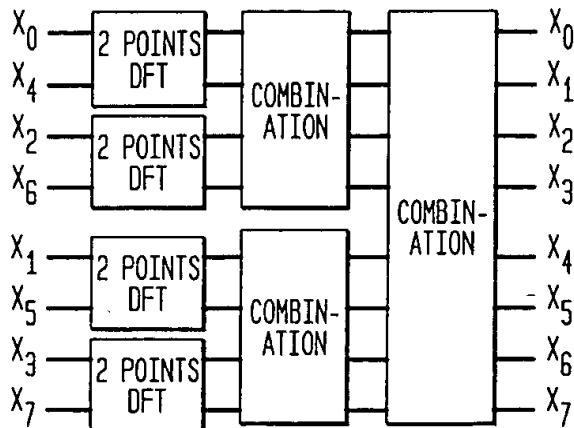


Fig 1C

(PRIOR ART)  
DIT RADIX-2 BUTTERFLY COMPUTATION

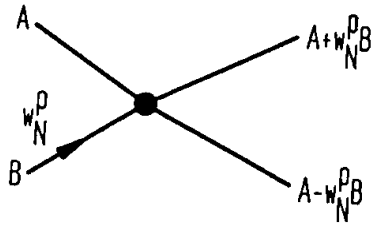


Fig 2A1

(PRIOR ART)  
DIF RADIX-2 BUTTERFLY COMPUTATION

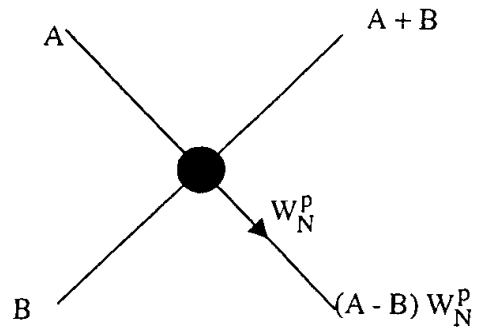


Fig 2A2

(PRIOR ART)  
BUTTERFLIES REPRESENTATION OF AN 8 POINTS FFT  
DFT N=2 COMBINATION COMBINATION  
1302 1304 1306

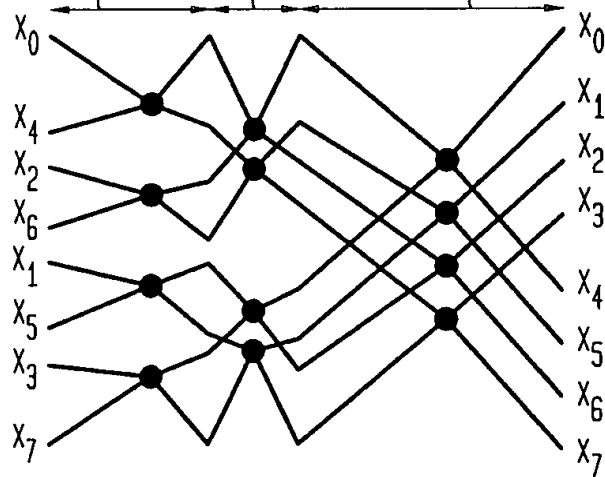


Fig 2B

FOOTED=42E0360

FIG. 2C  
(PRIOR ART)

IN PLACE FFT WITH BIT REVERSED INPUTS AND NORMALLY ORDERED OUTPUTS ( $r=2$ )

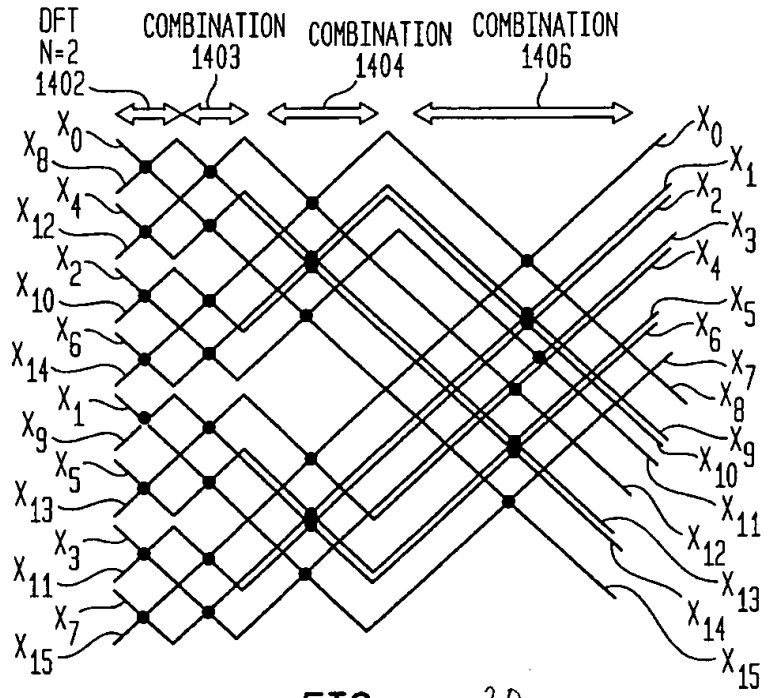
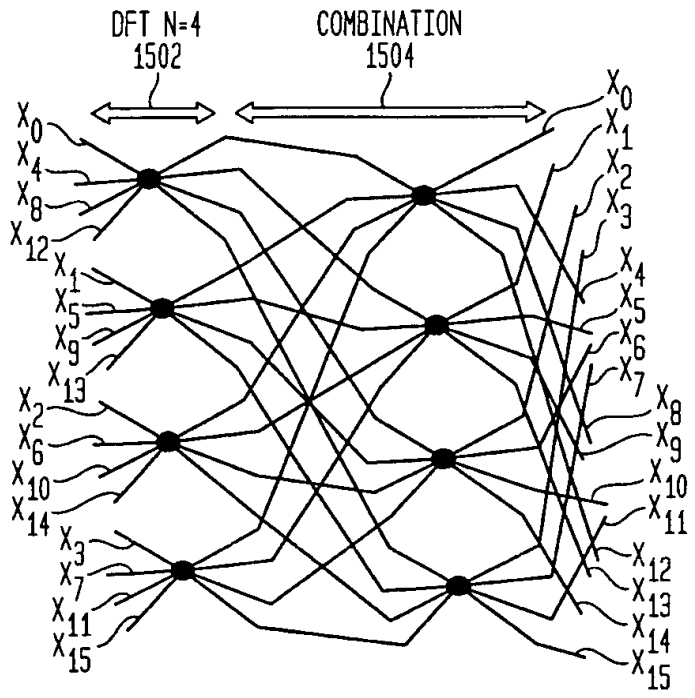


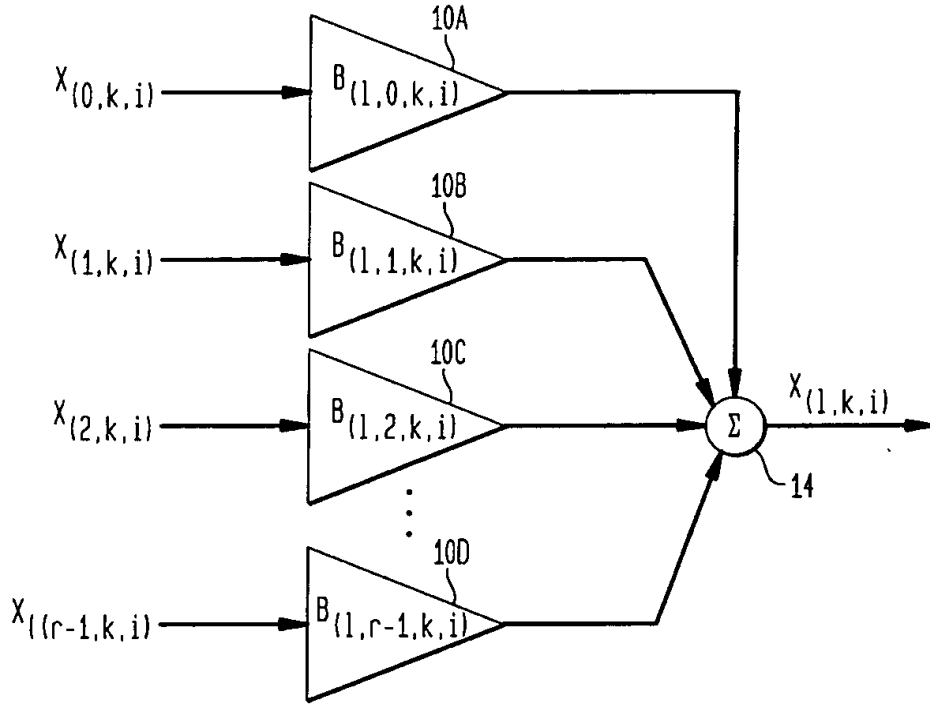
FIG. 2D  
(PRIOR ART)

IN PLACE FFT WITH BIT REVERSED INPUTS AND NORMALLY ORDERED OUTPUTS

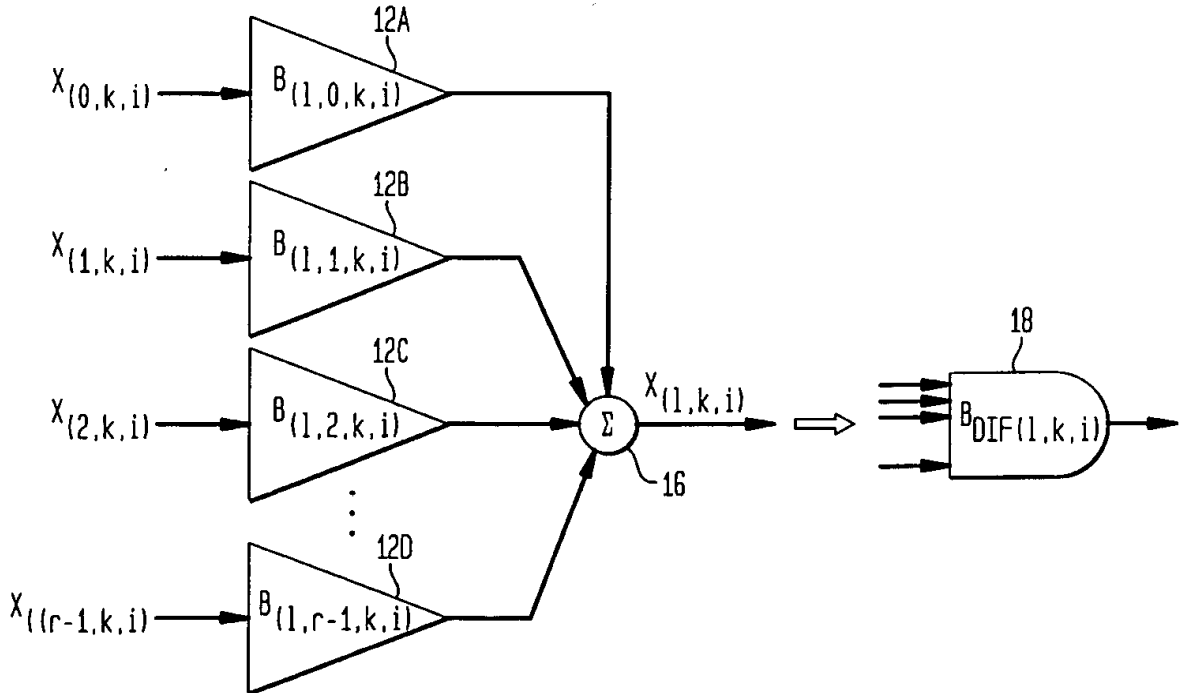


FOOTED: 4460660

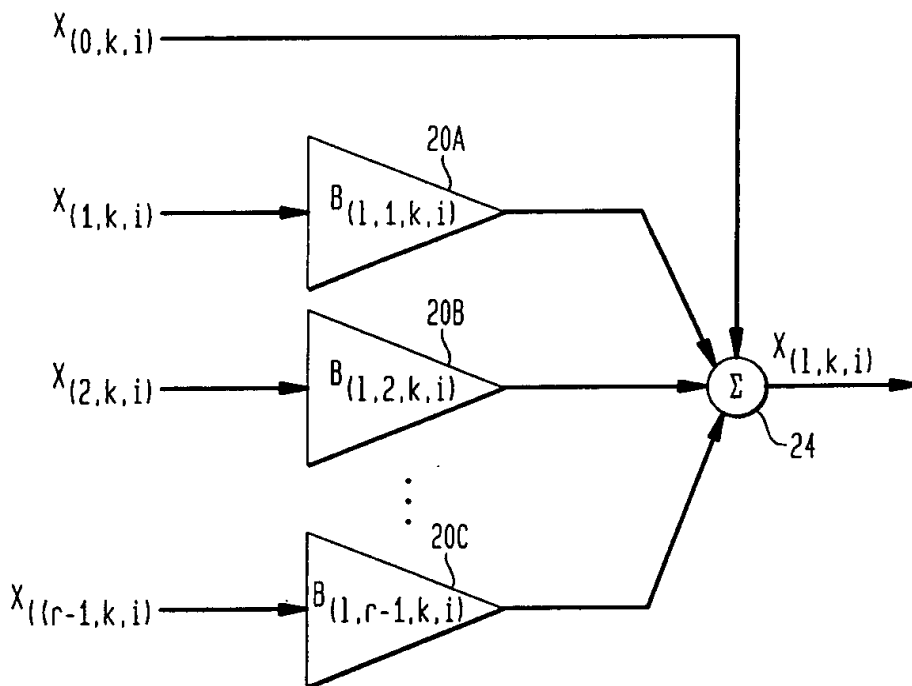
**FIG. 3A**  
JABER'S RADIX-r DIF ENGINE



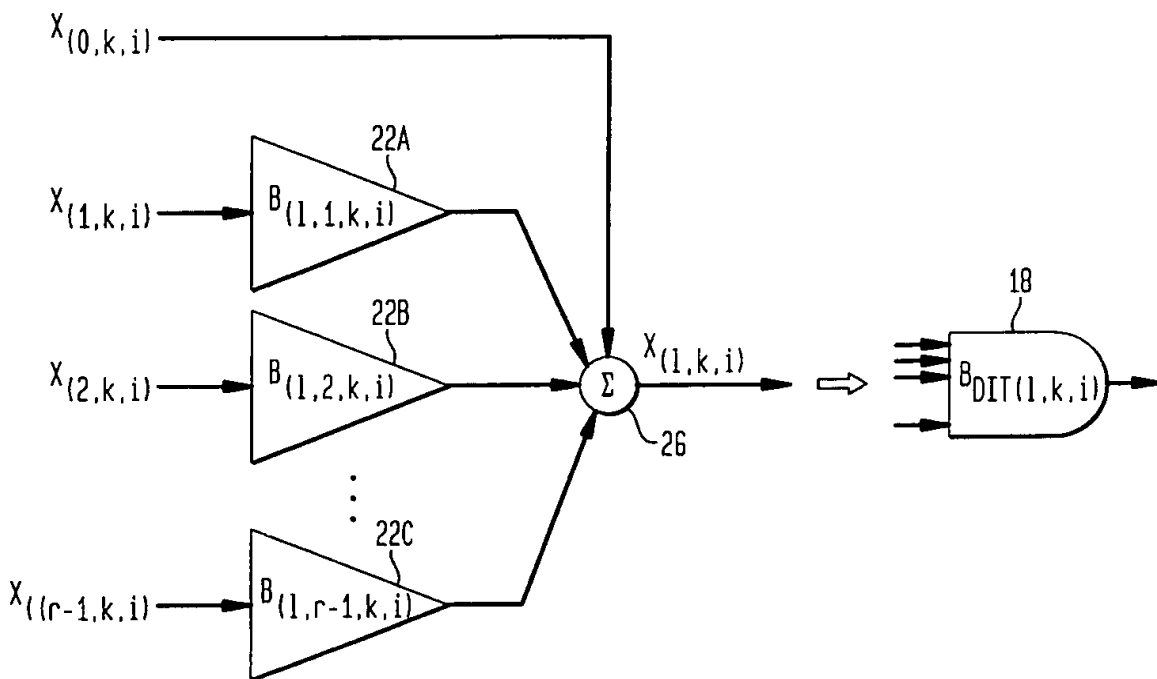
**FIG. 3B**  
SIMPLIFIED JABER'S RADIX-r DIF ENGINE



**FIG. 4A**  
 JABER'S RADIX- $r$  DIT ENGINE



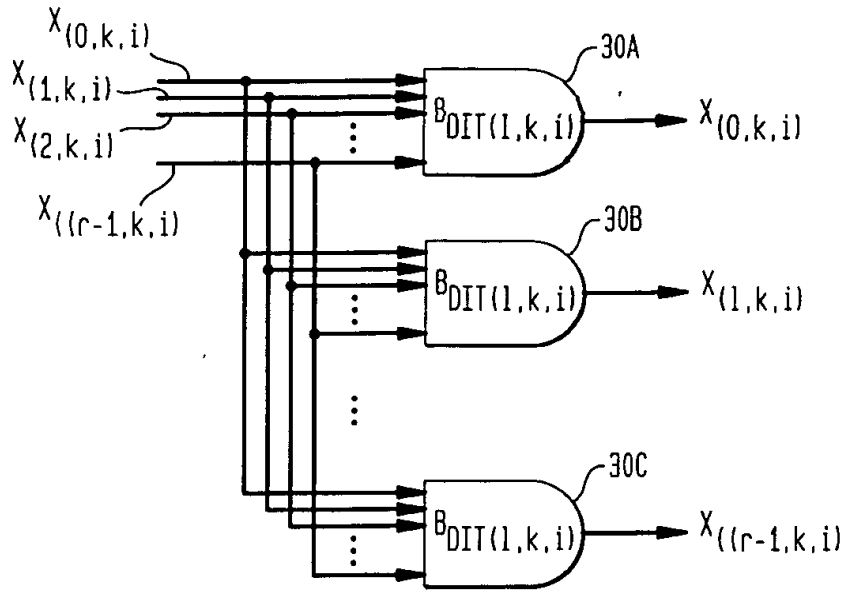
**FIG. 4B**  
 SIMPLIFIED JABER'S RADIX- $r$  DIT ENGINE



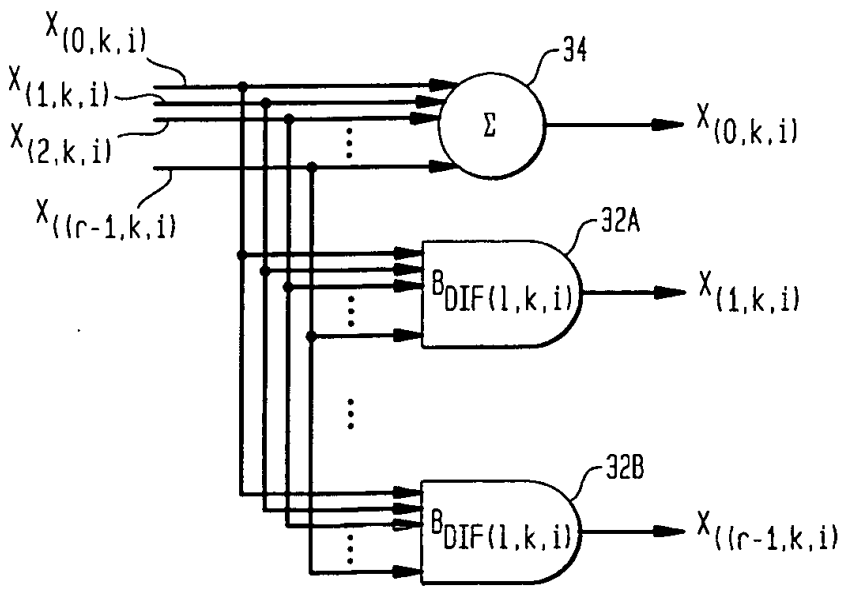
TOP SECRET

FOOTED = 42E0860

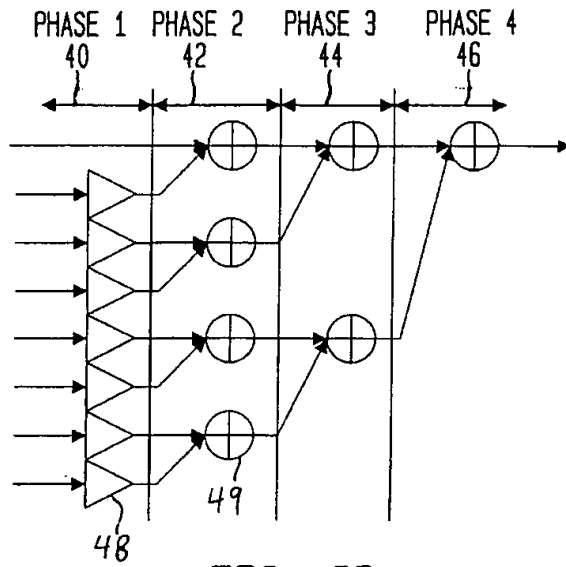
**FIG. 5A**  
JABER'S RADIX- $r$  DIF MODULE



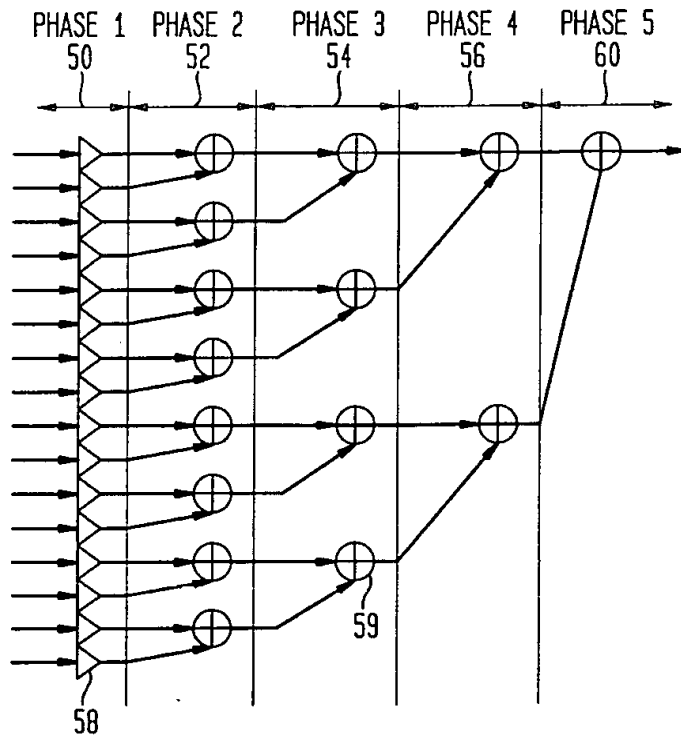
**FIG. 5B**  
JABER'S RADIX- $r$  DIT MODULE



**FIG. 6A**  
RADIX-8 DIT FFT ENGINE



**FIG. 6B**  
RADIX-16 DIF FFT ENGINE



TOP SECRET

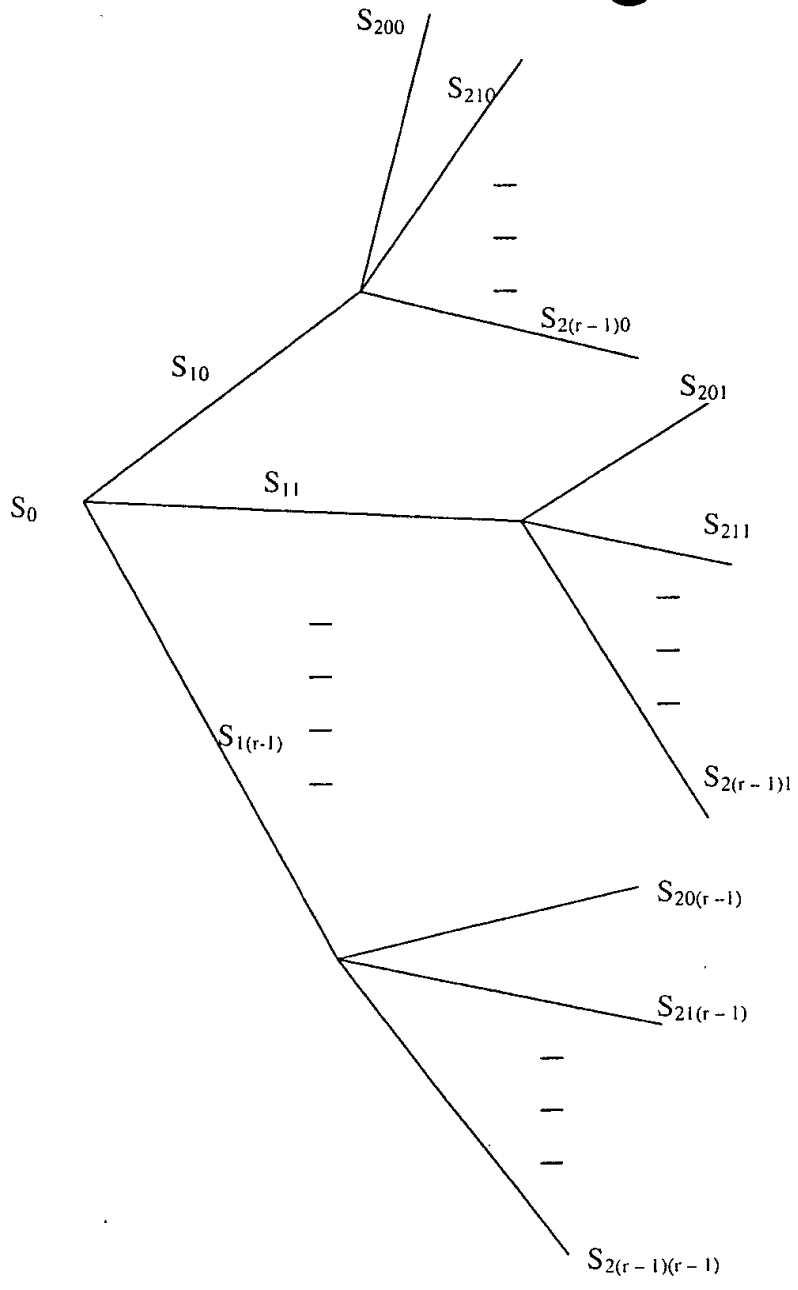


Fig 7



TOP SECRET

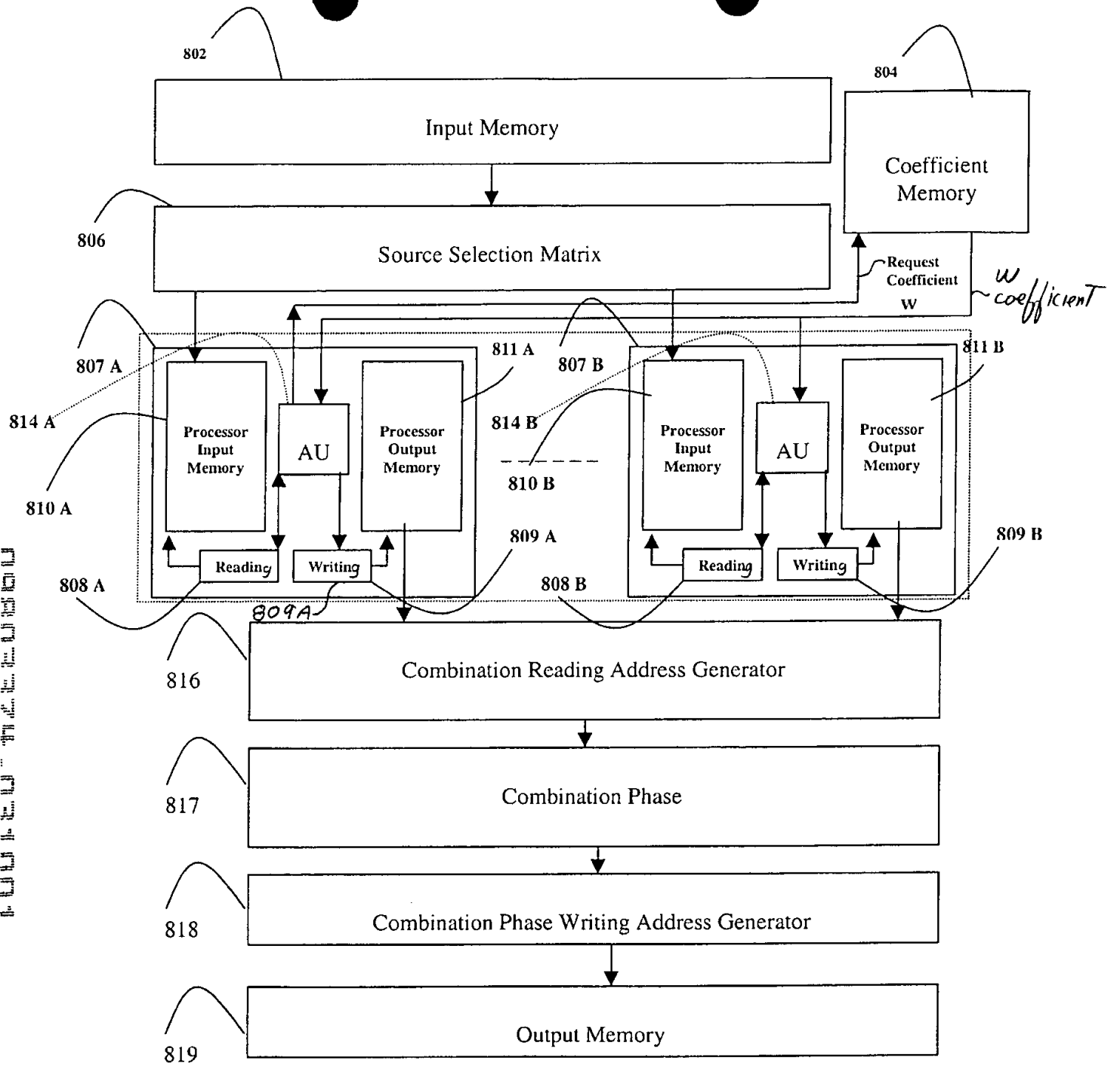


Fig 8

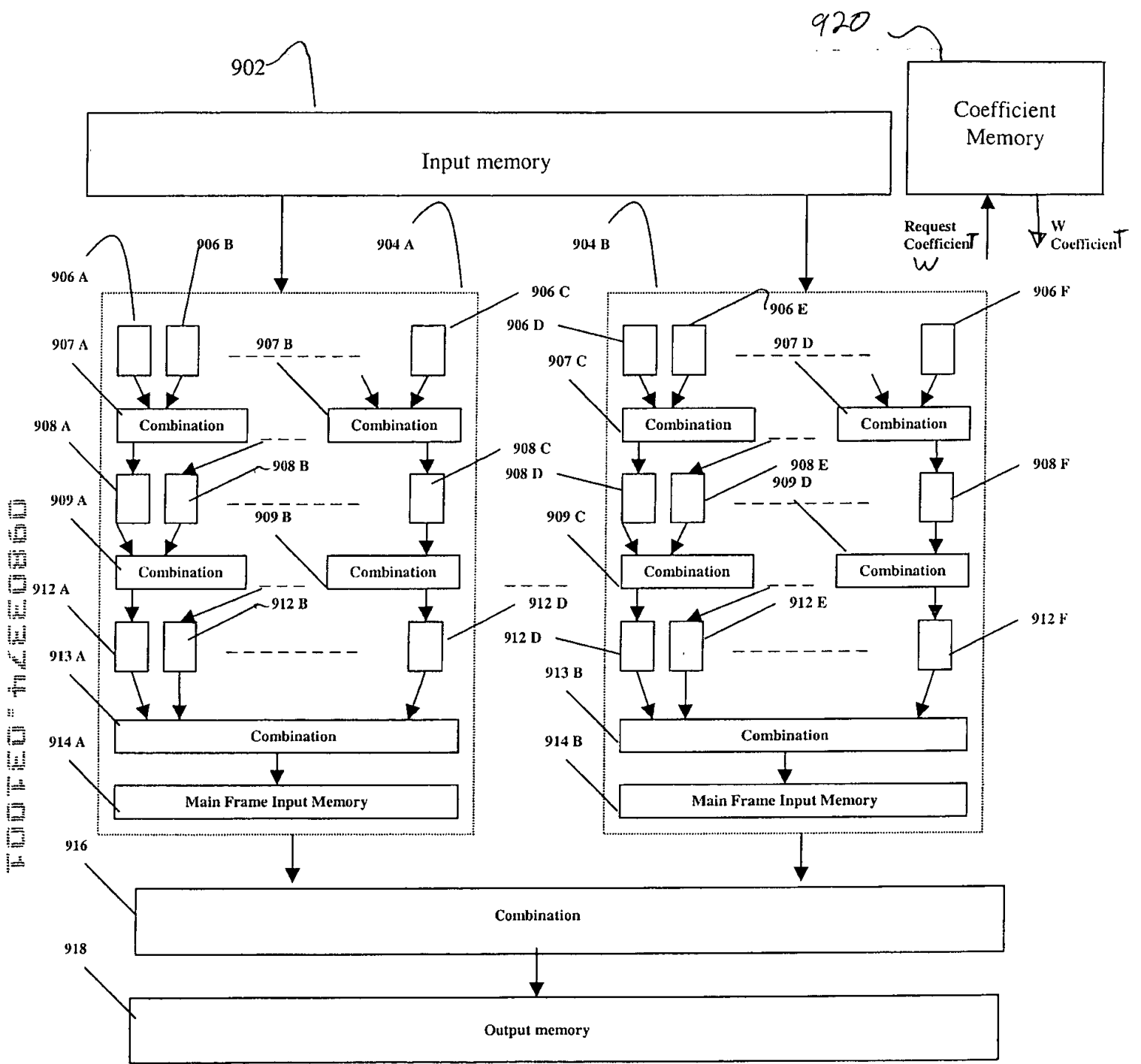
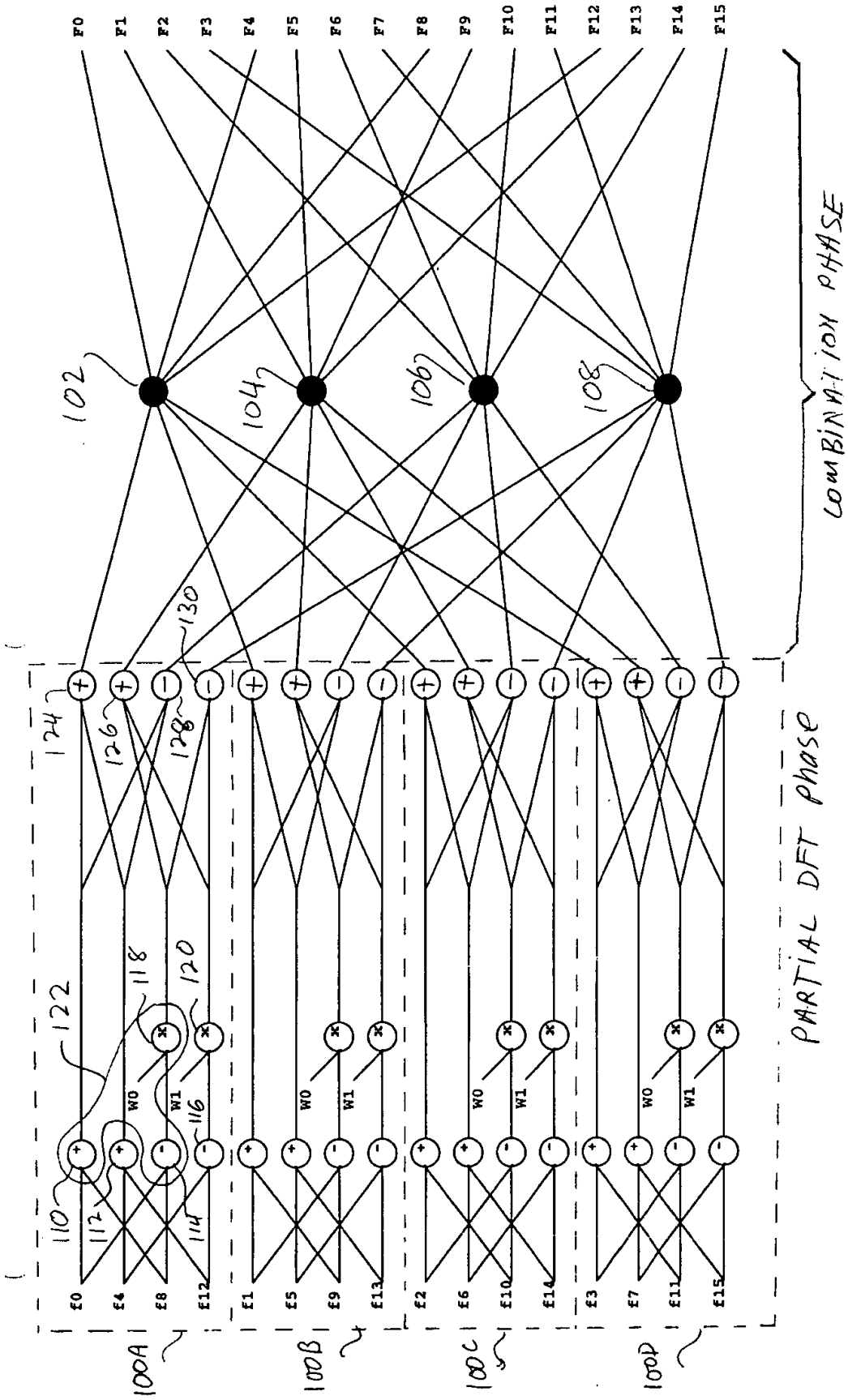


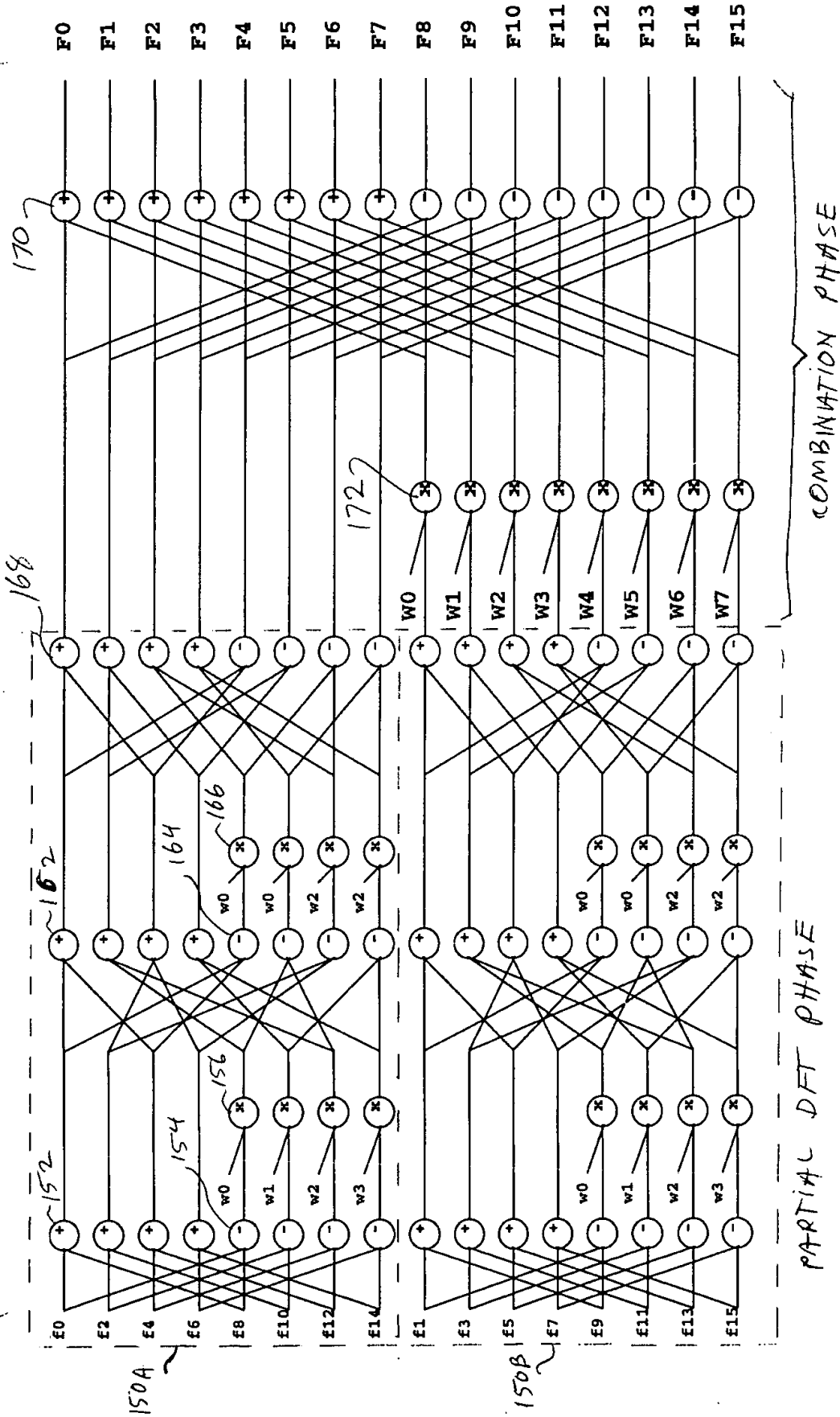
Fig 9

FIGURE 10



16 Points FFT radix 2 on four parallel processors with combination phase

FIG 10



16 POINTS FFT MAPPING WITH COMBINATION PHASE

FIG 11